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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/011,004	12/03/2001	Christopher J. Hansen	BP 1898	6949

7590 09/19/2005

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EXAMINER	
SAMS, MATTHEW C	
ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/011,004	HANSEN ET AL.	
	Examiner	Art Unit	
	Matthew C. Sams	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on 7/7/2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8, 10-14, 25-31, and 35-39 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Chang et al. (US-6,501,785 hereinafter, Chang).

Regarding claim 1, Chang teaches a method for dynamic frequency selection in a wireless communication network (Fig. 5 [101]) by allowing an access point (Fig. 5 [110, 112 & 114]) to determine the interference on the current wireless channel from a plurality of wireless channels. (Col. 1 lines 24-32) Chang teaches that when the interference on the current wireless channel exceeds a threshold as seen by the access point (Fig. 5 [110, 112 & 114]), which sends a request packet to find the channel spectrum information to at least one affiliated station (Fig. 5 [134-136]) by the current wireless channel. (Col. 1 lines 41-43 and Col. 2 lines 62-66) Chang teaches the generation from at least one affiliated station (Fig. 5 [134-136]), the channel spectrum

information of a plurality of wireless channels, providing by at least one affiliated station (Fig. 5 [134-136]), the channel spectrum information to the access point (Fig. 5 [110, 112 & 114]) from the current wireless channel, interpreting by the access point (Fig. 5 [110, 112 & 114]) the channel spectrum information to determine a desired wireless channel of the plurality of wireless channels and providing by the access point (Fig. 5 [110, 112 & 114]) a selection packet to a station (Fig. 5 [134-136]) through the current wireless channel, wherein the selection packet indicates the access point will change to another wireless channel at a future time. (Col. 5 line 16 through Col. 6 line 9) Chang teaches a processing module and memory in order for the access point to operate. (Col. 11 lines 6-10)

Regarding claim 2, Chang teaches that determining the interference on the current wireless channel by the access point (Fig. 5 [110, 112 & 114]) comprises transmitting a holding packet on the current wireless channel, where the holding packet addresses an invalid station and measuring the interference on the current wireless channel during the transmit period allocated to the invalid station. (Col. 13 lines 18-22)

Regarding claim 3, Chang teaches that when providing a request packet by the access point (Fig. 5 [110, 112 & 114]) comprises polling an affiliated station (Fig. 5 [134-136]), enabling a periodic generation of the channel spectrum information and enabling a spontaneous generation of the channel spectrum information. (Col. 5 line 16 through Col. 6 line 9)

Regarding claim 4, Chang teaches that generating the channel spectrum information by an affiliated station (Fig. 5 [134-136]) for some of the wireless channels by tuning into some of the wireless channels and measuring the interference to produce

channel interference data and compiling the channel interference data of some of the wireless channels to produce spectrum information. (Col. 2 line 62 through Col. 3 line 10)

Regarding claim 5, Chang teaches interpreting the channel spectrum data by the access point (Fig. 5 [110, 112 & 114]) comprises computing an outage received signal strength indication (RSSI) level, comparing the RSSI level with a target outage RSSI level and determining how they compare to each other. (Col. 6 lines 29-61)

Regarding claim 6, Chang teaches of selecting another channel within a group of channels based on prioritization. (Col. 6 line 62 through Col. 7 line 42)

Regarding claim 7, Chang teaches selecting the current channel as the desired wireless channel when the current channel has the least amount of interference compared to the other wireless channels. (Col. 8 line 52 through Col. 9 line 6)

Regarding claim 8, Chang teaches a basic service set pattern of neighboring access points (Fig. 5 [110, 112 & 114]) within the wireless communication network based on the channel spectrum information generated by the access point (Fig. 5 [110, 112 & 114]). (Col. 5 lines 16-33)

Regarding claim 10, the limitations of claim 10 are rejected as the same reason set forth in claim 1.

Regarding claim 11, the limitations of claim 11 are rejected as the same reason set forth in claim 5.

Regarding claim 12, the limitations of claim 12 are rejected as the same reason set forth in claim 6.

Regarding claim 13, the limitations of claim 13 are rejected as the same reason set forth in claim 7.

Regarding claim 14, the limitations of claim 14 are rejected as the same reason set forth in claim 8.

Regarding claim 25, the limitations of claim 25 are rejected as the same reason set forth in claim 1.

Regarding claim 26, Chang teaches that determining the interference on the current wireless channel by the access point (Fig. 5 [110, 112 & 114]) comprises transmitting a holding packet on the current wireless channel, where the holding packet addresses an invalid station and measuring the interference on the current wireless channel during the transmit period allocated to the invalid station. (Col. 13 lines 18-22)

Regarding claim 27, Chang teaches that when providing a request packet by the access point (Fig. 5 [110, 112 & 114]) comprises polling an affiliated station (Fig. 5 [134-136]), enabling a periodic generation of the channel spectrum information and enabling a spontaneous generation of the channel spectrum information. (Col. 5 line 16 through Col. 6 line 9)

Regarding claim 28, the limitations of claim 28 are rejected as the same reason set forth in claim 5.

Regarding claim 29, the limitations of claim 29 are rejected as the same reason set forth in claim 6.

Regarding claim 30, the limitations of claim 30 are rejected as the same reason set forth in claim 7.

Regarding claim 31, the limitations of claim 31 are rejected as the same reason set forth in claim 8.

Regarding claim 35, the limitations of claim 35 are rejected as the same reason set forth in claim 1.

Regarding claim 36, the limitations of claim 36 are rejected as the same reason set forth in claim 5.

Regarding claim 37, the limitations of claim 37 are rejected as the same reason set forth in claim 6.

Regarding claim 38, the limitations of claim 38 are rejected as the same reason set forth in claim 7.

Regarding claim 39, the limitations of claim 39 are rejected as the same reason set forth in claim 8.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 9, 15-24, 32-34 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Salonaho et al. (US-6,574,485 hereinafter, Salonaho).

Regarding claim 9, Chang teaches an access point that determines the interference on a current wireless channel exceeds a first interference threshold.

Chang differs from the claimed invention in that the access point (Fig. 5 [110, 112 & 114]) provides an increase power packet that indicates an increased transmit power level to at least one affiliated station (Fig. 5 [134-136]), determines the interference on the wireless channel with the increased transmit power level still exceeds the first threshold, the access point (Fig. 5 [110, 112 & 114]) generates a request packet. However, Salonaho teaches an access point (Fig. 2 [BTS1 & BTS2]) that provides an increase power packet that indicates an increased transmit power level to at least one affiliated station (Fig. 2 [MS1 & MS2]), determines the interference on the wireless channel with the increased transmit power level still exceeds the first threshold, the access point (Fig. 2 [BTS1 & BTS2]) generates a request packet. (Col. 5 line 51 through Col. 6 line 19 and Col. 3 lines 10-19) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate an access point (Fig. 2 [BTS1 & BTS2]) that controls the transmitting power of the affiliated stations (Fig. 2 [MS1 & MS2]) into the wireless communication network of Chang. One of ordinary skill in the art would have been motivated to do this since an efficient method of regulating the transmitting power in an environment where a variation of interference occurs is needed. (Col. 2 line 51 through Col. 3 line 20)

Regarding claim 15, the limitations of claim 15 are rejected as the same reason set forth in claim 9.

Regarding claim 16, Chang teaches a method for dynamic frequency selection in a wireless communication network by allowing an access point (Fig. 5 [110, 112 & 114]) to determine the interference on the current wireless channel from a plurality of wireless channels. (Col. 1 lines 24-32) Chang teaches that when the interference on the current

wireless channel exceeds a threshold as seen by the access point (Fig. 5 [110, 112 & 114]), which sends a request packet to find the channel spectrum information to at least one affiliated station (Fig. 5 [134-136]) by the current wireless channel. (Col. 1 lines 41-43 and Col. 2 lines 62-66) Chang teaches the generation from at least one affiliated station (Fig. 5 [134-136]), the channel spectrum information of a plurality of wireless channels, providing by at least one affiliated station (Fig. 5 [134-136]), the channel spectrum information to the access point (Fig. 5 [110, 112 & 114]) from the current wireless channel, interpreting by the access point (Fig. 5 [110, 112 & 114]) the channel spectrum information to determine a desired wireless channel of the plurality of wireless channels and providing by the access point (Fig. 5 [110, 112 & 114]) a selection packet to a station (Fig. 5 [134-136]) through the current wireless channel, wherein the selection packet indicates the access point (Fig. 5 [110, 112 & 114]) will change to another wireless channel at a future time. (Col. 5 line 16 through Col. 6 line 9) Chang teaches a processing module and memory in order for the access point (Fig. 5 [110, 112 & 114]) to operate. (Col. 11 lines 6-10)

Chang differs from the claimed invention by not mentioning the plurality of stations that have processing modules, memory and the operational instructions to generate channel spectrum information for the wireless channels and provide the channel spectrum information to the access point through the current wireless channel. However, Salonaho teaches a plurality of stations (Fig. 2 [MS1 & MS2]) that have processing modules, memory and the operational instructions to generate channel spectrum information for the wireless channels and provide the channel spectrum information to the access point (Fig. 2 [BTS1 & BTS2]) through the current wireless

channel. (Fig. 3, Col. 1 lines 47-56 and Col. 4 lines 1-21) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate the ability of a station to generate channel spectrum data of Salonaho into the wireless communication network of Chang. One of ordinary skill in the art would have been motivated to do this since both the station and the access point are capable of adjusting the transmitting power and frequency in order to ensure high quality transmissions.

Regarding claim 17, Chang teaches that determining the interference on the current wireless channel by the access point (Fig. 5 [110, 112 & 114]) comprises transmitting a holding packet on the current wireless channel, where the holding packet addresses an invalid station and measuring the interference on the current wireless channel during the transmit period allocated to the invalid station. (Col. 13 lines 18-22)

Regarding claim 18, Chang teaches that when providing a request packet by the access point (Fig. 5 [110, 112 & 114]) comprises polling an affiliated station (Fig. 5 [134-136]), enabling a periodic generation of the channel spectrum information and enabling a spontaneous generation of the channel spectrum information. (Col. 5 line 16 through Col. 6 line 9)

Regarding claim 19, Salonaho teaches a wireless communication network (Fig. 1) with station memory that includes operational instructions to cause that station processing module to generate channel spectrum information by tuning to some of the wireless channels (Fig. 3), measuring the interference on some of the wireless channels to produce the interference data and finally compiling data into the channel spectrum information. (Fig. 3, Col. 1 lines 47-56, Col. 2 lines 16-42 and Col. 6 lines 51-67)

Regarding claim 20, Chang teaches interpreting the channel spectrum data by the access point (Fig. 5 [110, 112 & 114]) comprises computing an outage received signal strength indication (RSSI) level, comparing the RSSI level with a target outage RSSI level and determining how they compare to each other. (Col. 6 lines 29-61)

Regarding claim 21, Chang teaches of selecting another channel within a group of channels based on prioritization. (Col. 6 line 62 through Col. 7 line 42)

Regarding claim 22, Chang teaches selecting the current channel as the desired wireless channel when the current channel has the least amount of interference compared to the other wireless channels. (Col. 8 line 52 through Col. 9 line 6)

Regarding claim 23, Chang teaches a basic service set pattern of neighboring access points (Fig. 5 [110, 112 & 114]) within the wireless communication network based on the channel spectrum information generated by the access point (Fig. 5 [110, 112 & 114]). (Col. 5 lines 16-33)

Regarding claim 24, the limitations of claim 24 are rejected as the same reason set forth in claim 9.

Regarding claim 32, the limitations of claim 32 are rejected as the same reason set forth in claim 9.

Regarding claim 33, the limitations of claim 33 are rejected as the same reason set forth in claim 16.

Regarding claim 34, the limitations of claim 34 are rejected as the same reason set forth in claim 19.

Regarding claim 40, the limitations of claim 40 are rejected as the same reason set forth in claim 9.

Response to Arguments

6. Applicant's arguments filed 7/7/2005 have been fully considered but they are not persuasive.

7. In response to the applicant's argument that Chang does not teach determining, by an access point, interference on a current wireless channel of a plurality of wireless channels (Page 23 Para. 1), it is the examiner's view that an access point can mean, as stated in Newton's Telecom Dictionary 20th Edition, "A point where connections may be made for testing or using particular communications circuits". It is the examiner's view that Chang's dynamic frequency hopping management device (DFHM) (Fig. 5 [340]) can be considered part of the access point because the DFHM is controlling the mobile device's access to the network through the base stations. Therefore, the DFHM is a point where connections are made for using particular communication circuits.

8. In response to the applicant's argument that Chang does not teach interpreting, by the access point, the channel spectrum information to determine a desired wireless channel of the plurality of wireless channel (Page 24 Para. 1), it is the examiner's view that Chang's DFHM (Fig. 5 [340]) can be considered part of the access point because the DFHM is controlling access to the network by giving out frequency hopping patterns to the mobile device by determining among other quality parameters, current interference conditions from base stations in the particular vicinity of interest. (Col. 1 lines 24-37) Therefore, the base station transmits channel information to the mobile device to maintain a quality connection.

9. Although not cited above, but pertinent nonetheless, Chawla et al. (US-6,459,901) teaches a wireless network that includes base stations that estimate system

performance of channels by monitoring quality parameters including signal-to-interference-plus-noise-ratio. (Col. 3 lines 31-50 and Col. 4 lines 7-34)

Since no new arguments were raised regarding the dependent claims, the original rejection stands in view of the additional explanation.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571)272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MCS
9/8/2005

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